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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/576,847	03/19/2007	David H. McFadden	54330/328845	2283

23370 7590 08/13/2007  
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EXAMINER
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LEUNG, PHILIP H

ART UNIT	PAPER NUMBER
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3742

MAIL DATE	DELIVERY MODE
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08/13/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/576,847

Applicant(s)

MCFADDEN, DAVID H.

Examiner

Philip H. Leung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12-11-2006 & 5-29-2007.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_.

### DETAILED ACTION

1. The drawings filed 4-20-2006 are acceptable.
2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 22, 26 and 28 are rejected under 35 U.S.C. 103(a) as being obvious over Bakanowski et al (US 4,464,554), in view of Toppan (JP 63-317068) or Jun (US 5,825,000) (all cited by the applicant).

As shown in Figures 2-6 and col. 4, line 46 - col. 8, line 39), Bakanowski shows a microwave cooking oven (10) comprising an oven cavity (24), at least one cooking rack (37), a single magnetron (40), two opposing rectangular waveguide chambers (46, 50) each with a plurality of radiating slots of less than half free space wavelength (col. 7, line 58 - col. 8, line 4). It does not show the slot is configured such that a substantially uniform microwave pattern is achieved without using a mechanical phase-altering device as it includes a mechanical device. However, the term "uniform microwave pattern" is highly relative, any microwave pattern in a microwave oven with or without a mechanical phase altering device can be considered as "uniform" to a degree. Anyway, Toppan shows a microwave oven 10 with slot radiator D including a plurality of slots 13. It teaches "uniform irradiation can be carried out even without

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using a means for rotating the substance" (see Figures 3 and 4 and the English abstract). Jun also shows a microwave oven with radiating slots 232 and 234 for uniform microwave pattern without mechanical phase-altering devices (see Figures 1 and 2 and col. 1, lines 41-62). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Bakanowski to arrange its slots so that a uniform radiating pattern is achieved without a mechanical altering device to lower cost, in view of the teaching of Toppan or Jun.

4. Claims 29 and 30 are rejected under 35 U.S.C. 103(a) as being obvious over Bakanowski et al (US 4,464,554), in view of Toppan (JP 63-317068) or Jun (US 5,825,000), as applied to claims 1-4, 22, 26 and 28 above, and further in view of Dills (US 4,480,164) (cited by the applicant).

Bakanowski shows every feature as claimed except for the use hot gas in addition to the microwave for heating. Dills shows a microwave oven with two rectangular waveguides together with hot air circulation from top and bottom of the oven chamber for heating food placed on a rack (see Figures 1-4 and col. 2, line 18 - col. 5, line 44). It would have been obvious to one having ordinary skill in the art at the time of the invention to further modify Bakanowski to use hot air circulation for better cooking result, in view of the teaching of Dills.

5. Claims 5-16, 23-25 and 31 are rejected under 35 U.S.C. 103(a) as being obvious over Bakanowski (US 4,464,554), in view of Toppan (JP 63-317068) or Jun (US 5,825,000), as applied to claims 1-4, 22, 26 and 28 above, and further in view of Blass et al (US 2,704,802) or Smith (US 3,210,511) (both cited by the applicant).

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As shown above, Bakanowski shows every feature as claimed (see Figures 2-6 and col. 4, line 46 - col. 8, line 39) except for the exact arrangement of the slots. Blass shows a microwave oven having a waveguide 14 with slanted radiating slots 19 (see Figures 1-6 and col. 1, line 80 - col. 3, line 48). Smith also shows a microwave oven with two rectangular waveguides each with a radiating slot offset from each other (see Figures 1-3 and col. 1, line 47 - col. 2, line 42). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Bakanowski to use slanted slots for more uniform radiating patterns and better cooking result, in view of the teaching of Blass or Smith. The exact size and pattern of the slots would have been a matter of engineering expediency following the teaching of these references.

6. Claims 17-21 and 27 are rejected under 35 U.S.C. 103(a) as being obvious over Bakanowski et al (US 4,464,554), in view of Toppan (JP 63-317068) or Jun (US 5,825,000) as applied to claims 1-4, 22, 26 and 28 above, and further in view of Meredith (US 5,369,250) (cited by the applicant).

As shown above, Bakanowski shows every feature as claimed (see Figures 2-6 and col. 4, line 46 - col. 8, line 39) except for the use of a slot cover for sealing the slots. Meredith shows a microwave heating device with a waveguide 6 having slots 7-11 and the slots are covered with a sheet of a dielectric material (see Figures 3-6, col. 2, lines 7-17 and col. 5, lines 12-19). It would have been obvious to one having ordinary skill in the art at the time of the invention to modify Bakanowski to use a cover for sealing the radiating slots to prevent contamination of the

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waveguide and for better impedance matching, in view of the teaching of Meredith. The exact material of the cover would have been a matter of mere design variations.

7. Dorr (US 6,437,303) is further cited to show a microwave furnace with slotted waveguide for microwave input.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H. Leung whose telephone number is (571) 272-4782.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571)-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Philip H Leung  
Primary Examiner  
Art Unit 3742

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8-4-2007